

AMENDMENTS TO THE CLAIMS

1-35. (cancelled)

36. (currently amended) An anastomosis ~~system~~ tool for connecting a graft vessel to a target vessel, comprising:

a one-piece anastomosis device having a diameter;

a first tube configured to receive said anastomosis device;

a second tube ~~concentric with the first tube~~, the said first and second ~~tube~~ tubes

movable with respect to one another to deploy ~~the said~~ anastomosis device,

wherein the diameter of said anastomosis device increases upon deployment;

and

a side hole in at least one of ~~the~~ said first and second tubes configured to allow the

graft vessel to pass out of the side of ~~the~~ said tube.

37. (currently amended) The anastomosis tool of Claim 36, wherein ~~the~~ said second tube is rotatable with respect to ~~the~~ said first tube.

38. (currently amended) The anastomosis tool of Claim 36, wherein ~~the~~ said second tube is movable with respect to ~~the~~ said first tube to apply torque to said anastomosis device.

39. (currently amended) The anastomosis tool of Claim 36, wherein ~~the~~ said second tube is movable with respect to ~~the~~ said first tube to apply an axial compressive force to said anastomosis device.

40. (currently amended) The anastomosis tool of Claim 36, wherein ~~the~~ said first tube is removably connectable to said anastomosis device.

41. (currently amended) The anastomosis tool of Claim 36, further comprising a handle connected to ~~the~~ said first and second tubes with a mechanism for deploying said anastomosis device.

42. (currently amended) The anastomosis tool of Claim 36, wherein ~~the~~ said first tube includes a plurality of connecting members at a distal end thereof and said anastomosis device includes a plurality of features arranged to removably connect to ~~the~~ said plurality of connecting members.

43-59. (canceled)

60. (previously presented) A method of performing anastomosis between a graft vessel and a target vessel, the method comprising:

receiving an anastomosis device on an anastomosis device applicator having a substantially rigid vessel penetrating member;

connecting a graft vessel to the anastomosis device on the anastomosis device applicator;

penetrating a target vessel with the vessel penetrating member of the anastomosis device applicator;

advancing the anastomosis device into the penetration in the target vessel;

deploying the anastomosis device with the anastomosis device applicator to connect the graft vessel to the target vessel; and

maintaining the anastomosis device applicator and vessel penetrating member outside of the lumen of the graft vessel during the receiving, connecting, penetrating, advancing and deploying.

61. (previously presented) The method of Claim 60, wherein the step of deploying the anastomosis device is performed by moving two tubes of the anastomosis device applicator with respect to one another to deploy the anastomosis device.

62. (previously presented) The method of Claim 60, wherein the anastomosis device is a one-piece anastomosis device.

63. (previously presented) The method of Claim 60, wherein during the penetrating step the vessel penetrating member is positioned inside the anastomosis device applicator.

64. (previously presented) The method of Claim 60, wherein the step of deploying connects an end of the graft vessel to a side of the target vessel.

65. (previously presented) A method of performing anastomosis between a graft vessel and a target vessel, the method comprising:

providing a one-piece anastomosis device;

receiving a said anastomosis device on an anastomosis device applicator including a first tube and a second tube;

connecting a graft vessel to said anastomosis device on the anastomosis device

applicator with an end of the graft vessel passing out a side hole of at least one of the first and second tubes; and

deploying said anastomosis device with the anastomosis device applicator to connect the graft vessel to the target vessel.

66. (previously presented) The method of Claim 65, wherein the step of deploying said anastomosis device is performed by moving the first and second tubes with respect to one another.

67. (previously presented) The method of Claim 65, wherein the step of receiving said anastomosis device on the anastomosis device applicator is performed by removably connecting a plurality of features of said anastomosis device to a plurality of connecting members at a distal end of the first tube.

68-69. (canceled)

70. (new) The anastomosis tool of Claim 36, wherein said first tube and said second tube are substantially concentric.